

REMARKS

I. CLAIM STATUS

Claims 58-69 and 96-114 are pending and stand rejected. Claims 70-95 have been withdrawn pursuant to the Restriction Requirement dated February 11, 2008. Without prejudice or disclaimer, claims 107-114 are cancelled herein. No claims are amended herein.

II. REJECTIONS UNDER 35 U.S.C. § 103(a)

A. The Examiner rejects claims 58-67, 96-98, 100-103, 105-110, and 112-114 under 35 U.S.C. § 103 as unpatentable over U.S. Patent Application Publication No. 2001/0042586 A1 to Caretta et al. ("Caretta") in view of U.S. Patent No. 6,334,919 to Takeyama et al. ("Takeyama") and U.S. Patent No. 6,482,884 to Schaal ("Schaal"). See July 29, 2008, Office Action at 2-7.

The Examiner asserts that "Caretta discloses a method of producing a tire whereby an elastomeric material is fed from a dispensing organ (discloses as an extruder; [0022]) as a continuous elongated element and deposited on a toroidal support in a plurality of coils to define the tire component (i.e. the structural element of the tire) ([0001]-[0002])." *Id.* at 3. The Examiner, however, concedes that "Caretta fails to teach extruding at the specific shear rate and adding viscosity reducing additives to the elastomeric composition." *Id.* at 4.

The Examiner relies on Takeyama and Schaal to attempt to cure these deficiencies. First, the Examiner states that Takeyama, "drawn also to tire production, discloses processing conditions that involve a shear rate in the range of 1000-7500 sec⁻¹ (column 9, lines 40-42)." *Id.* Second, the Examiner states that Schaal,

“drawn to rubber compositions useful in the production of tires, discloses adding small inorganic compounds to the rubber composition to lower the viscosity (column 4, lines 45-58).” *Id.* The Examiner also argues that the additives in Schaal reduce the elongational viscosity “because even Schaal appreciates that decreases in Mooney viscosity alone are not advantageous and do nothing to cure the deficiencies of storage temperature dependence (column 3, lines 1-5) as the viscosity reducing additives of Schaal have are [sic] able to do.” *Id.* The Examiner concludes that it would have been obvious (1) “to have used such processing conditions (i.e. high shear rates) in view of Takeyama because it was known that using such a high shear rate in the process of kneading and extruding involves proper mixing of the additive components (column 9, lines 16-24);” and (2) “to have included small organic compounds for lowering the viscosity of a rubber composition used to make tires in view of Schaal because such was known to offer improved processability as well as improved resistance against the decay of processability during storage (column 3, lines 35-45).” *Id.*

Applicants respectfully traverse this rejection for at least the following reasons.

With respect to obviousness, several basic factual inquiries must be made in order to determine the obviousness or non-obviousness of claims under 35 U.S.C. § 103. These factual inquiries, set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 U.S.P.Q. 459, 467 (1966), require the Examiner to:

- (1) Determine the scope and content of the prior art;
- (2) Ascertain the differences between the prior art and the claims in issue;
- (3) Resolve the level of ordinary skill in the pertinent art; and
- (4) Evaluate evidence of secondary considerations.

The obviousness or nonobviousness of the claimed invention is then evaluated in view of the results of these inquiries. *Graham*, 383 U.S. at 17-18, 148 U.S.P.Q. at 467; *see also KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1730, 82 U.S.P.Q.2d 1385, 1388 (2007).

Indeed, to establish a *prima facie* case of obviousness, the Examiner must:

make a determination whether the claimed invention “as a whole” would have been obvious at that time to that person. Knowledge of applicant’s disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the “differences,” conduct the search and evaluate the “subject matter as a whole” of the invention.

M.P.E.P. § 2142. “The key to supporting any rejection under 35 U.S.C. § 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious.”

Id. It is important to note, moreover, that the prior art references relied upon in a rejection “must be considered in its entirety, *i.e.*, as a whole, including portions that would lead away from the claimed invention.” M.P.E.P. § 2141.03(VI); *see also Graham*, 383 U.S. at 17, 148 U.S.P.Q. at 467.

The Examiner has not established a *prima facie* case of obviousness because the claimed invention as a whole would not have been obvious over Caretta, Takeyama, and Schaal, when the references are considered as a whole. Specifically, none of the references teaches or suggests forming, by extrusion, an elastomeric composition at a shear rate of at least 1000 sec^{-1} . Moreover, one of skill in the art would not have been motivated to combine the organic compounds of Schaal with the tire components of Caretta.

First, as noted above, the Examiner concedes that “Caretta fails to teach extruding at the specific shear rate . . .,” but relies on Takeyama to correct this

deficiency. July 29, 2008, Office Action at 4. The shear rate disclosed in Takeyama, however, has no relationship to the shear rate used in an extruder. Rather, it reports a shear rate that is expressly limited to use during a melt kneading operation performed on a melt material. See Takeyama, col. 9, lines 39-42 (“[A] shear rate at the time of kneading of 1000 to 7500 sec^{-1} is preferable.”) and col. 15, lines 5-10 (“[A] shear rate at the time of kneading of 2500 to 7500 sec^{-1} is preferable.”) (emphasis added in both). There is a difference between a material subjected to a kneading operation, where heavy shear stress is necessary and the dimensions of the resulting blend are not critical, and a material subjected to an extrusion operation, as claimed, where the dimensions and accuracy of the shape of the resulting product cannot be jeopardized by excessive deformation induced in the material by kneading at heavy shear stress.¹ Therefore, the mere fact that Takeyama teaches a shear rate in a kneading operation would not motivate one of skill in the art to use the same shear rate in an extrusion operation. Thus, Takeyama fails to teach or suggest forming, by extrusion, the an elastomeric compositoin at a shear rate of at least 1000 sec^{-1} . Schaal fails to cure this deficiency as well.

For at least this reason, Applicants respectfully submit that the rejection should be withdrawn.

Second, as discussed above, the Examiner concedes that “Caretta fails to teach . . . adding viscosity reducing additives to the elastomeric composition,” but relies on Schaal to correct this deficiency. July 29, 2008, Office Action at 4. Schaal discloses “a

¹ For further clarification, Applicants note that Takeyama’s reference to kneader/extruders is of no avail since such devices are two stage operations.

process for improving the processability, storage stability, and/or cure rate of an uncured silica reinforced rubber composition where silica comprises the major filler in the reinforced rubber composition.” Schaal, Abstract. Schaal describes that the addition of organic compounds “lowers the viscosity and also reduces the rate of increase of the viscosity of the uncured rubber composition as a function of storage time, compared to a control composition with none of these organic compounds.” *Id.* at col. 5, lines 55-59 (emphasis added). Indeed, the processability is measured after storage of 8 days at 70°C by evaluating the peak stress. *See id.* at col. 17, lines 18-38. The Examiner reasons that “[a]s to the additives specifically reducing the elongational viscosity, the examiner submits that the additives of Schaal are doing just that because even Schaal appreciates that decreases in Mooney viscosity alone are not advantageous and do nothing to cure the deficiencies of storage temperature dependencies . . . as the viscosity reducing additives of Schaal are able to do. *See* July 29, 2008, Office Action at 4.

Applicants respectfully disagree. The fact that Schaal’s additives reduce the problem of processability decay during storage is wholly irrelevant. First, Schaal’s additives are directed to aiding silica reinforced rubbers by reducing the silica-silica interactions. *See e.g.*, Schaal at Abstract, col. 2, lines 7-8. Yet, here there is no mention in Caretta of the use of silica in its rubbers. Second, there is no evidence of record that reducing the problem of processability decay during storage can be equated with reducing elongational viscosity during extrusion. As explained in the specification, the improvement of Mooney viscosity is unrelated to elongational viscosity;

Consequently, the operating conditions in the kneader portion are independent of the

improvements in one do not correlate to improvements in the other. See Specification as-published (U.S. Patent Application Publication No. 2006/0169390) at ¶¶ [0016]-[0017]. In fact, since Mooney viscosity is typically measured at a shear rate of about 1 sec^{-1} , it cannot predict anything regarding elongational viscosity that would be measured at a rate in excess of about 1000 sec^{-1} . Schaal's simple recitation of improved "processability" does not justify any conclusion regarding elongational viscosity. Third, Caretta discloses a method of manufacturing components for a tire of a vehicle (see Caretta, Abstract) and is not concerned with the storage of the produced materials. The elongated element is formed on the support and not stored prior to being formed on the support. Reducing the problem of processability decay during storage, therefore, has no bearing on the process of Caretta. Thus, contrary to the Examiner's position, one of skill in the art would not have been motivated to add the organic compounds of Schaal to Caretta.

B. The Examiner rejects claims 68 and 69 under 35 U.S.C. § 103 as unpatentable over Caretta, Takeyama, and Schaal, as applied to claim 58 above, further in view of U.S. Patent No. 3,865,777 to Wittenwyler ("Wittenwyler"). See July 29, 2008, Office Action at 7-8.

As discussed above, the combination of Caretta, Takeyama, and Schaal fail to render obvious the claimed invention. Wittenwyler fails to cure their deficiencies. For this reason, Applicants respectfully submit that the rejection should be withdrawn.

operating conditions of the extruder portion.

C. The Examiner rejects claims 99, 104, and 111 under 35 U.S.C. § 103 as unpatentable over Caretta, Takeyama, and Schaal, as applied to claims 98 and 107 above, further in view of U.S. Patent No. 5,216,066 to Sandstrom ("Sandstrom"). See July 29, 2008, Office Action at 8.

As discussed above, the combination of Caretta, Takeyama, and Schaal fail to render obvious the claimed invention. Sandstrom fails to cure their deficiencies. Further, the Examiner's argument is premised on the teachings of Schaal regarding its polymers; however, the Examiner in the rejection of claims 98 and 107 never provided a motivational basis for substituting the polymers of Schaal for the polymers of Caretta. Rather, the Examiner has merely argued a basis for adding Schaal's additives to Caretta. For this reason, Applicants respectfully submit that the rejection should be withdrawn.

D. Applicants do not necessarily agree with the Examiner's characterization of the cited prior art not relied upon by the Examiner, which he "consider[s] pertinent to applicant's disclosure." July 29, 2008, Office Action at 10.

Conclusion

In view of the foregoing remarks, Applicants respectfully request reconsideration of this application and the timely allowance of the pending claims.

If the Examiner believes a telephone conference could be useful in resolving any outstanding issues, he is respectfully invited to contact Applicants' undersigned counsel at (202) 408-4152.

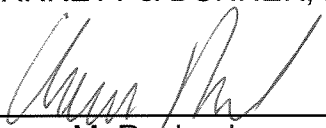
Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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By: _____


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